Oral Session 12
Heart failure and cardiomyopathies

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Congestive heart failure with concomitant tachyarrhythmia: Predictors for tachycardiomyopathy

M. Fischer, R. Twerenbold, O. Pfister*
Cardiology, University Hospital, Basel, Switzerland

Introduction: Differential diagnosis of tachycardiomyopathy (TC) from other cardiomyopathies remains challenging in patients presenting with new onset congestive heart failure (CHF) and concomitant tachyarrhythmia. Given the benign prognosis of TC defining clinical associates that predict complete resolution of left ventricular systolic dysfunction (LVSD) after rhythm/rate control are utterly needed. Therefore, the aim of this study was to determine the factors that predict complete resolution of LVSD in patients with new onset CHF and concomitant tachyarrhythmia.
Method: Using an institutional echo database we screened for patients with new onset LVSD (LV ejection fraction (LVEF) ≤40%) in the presence of tachyarrhythmia (non-sinus rhythm ≥100 beats per minute (bpm)). Hospital charts of 71 patients meeting inclusion criteria were reviewed with respect to patient characteristics and pharmacologic and non-pharmacologic management. After six months follow-up, baseline characteristics of patients with normalized LVEF≥50% (suspected TC patients) were compared with those of patients with persistent LVSD (LVEF<50%).
Results: Patients were 58 (IQR 51–67) years old, mostly symptomatic (89% NYHA ≥ II), with a median heart rate of 118 bpm (IQR 100-130) and a median LVEF of 30% (IQR 25-38). Arrhythmias included atrial fibrillation (80%), atrial flutter (16%) and ectopic atrial tachycardia (4%). Besides recommended heart failure medication, patients were treated with electroconversion (44%), radiofrequency ablation (31%) and amiodarone (41%). After a median follow-up time of six months median LVEF improved to 50% (IQR 44-55) and median heart rate was 65 bpm (IQR 55-77). Rhythm control (sinus rhythm) was achieved in 48 (68%) patients and adequate rate control in 23 (32%) patients. Thirty-seven (52%) patients exhibited complete normalization of LVEF (≥ 50%). The following baseline parameters were significantly associated with LVEF normalization at follow-up: lack of hypertension ($p<0.05$), younger age ($p<0.02$), presence of atrial flutter ($p<0.05$), better LVEF ($p<0.001$) and less LV remodeling ($p<0.05$).
Conclusion: Half of the patients presenting with first onset CHF in the context of significant LVSD and concomitant tachyarrhythmia normalize their LVEF within six month under appropriate therapy. The absence of hypertension or significant LV remodeling and the presence of atrial flutter are strong predictors of LVEF normalization and thus may identify patients with TC.
Disclosure of Interest: None declared

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Impact of mitral regurgitation on clinical outcomes among patients with low-flow, low-gradient severe aortic stenosis undergoing dobutamine stress echocardiography prior to transcathether aortic valve implantation

C. O'Sullivan, A. Bütikofer, F. Praz, St. Stortecky, Th. Pilgrim, L. Buellesfeld, A. Khattab, B. Meier, St. Windecker, P. M. Wenaweser, St. Zbinden*
Cardiology, Inselspital, Bern, Switzerland

Introduction: We aimed to assess the impact of mitral regurgitation (MR) on one-year clinical outcomes among patients with low-flow, low-gradient (LFLG) severe aortic stenosis (AS) who underwent dobutamine stress echocardiography prior to transcatheter aortic valve implantation (TAVI).
Method: Of 606 consecutive patients undergoing TAVI at our institution between August 2007 and December 2012, we analysed 36 (6%) patients with “classical” LFLG severe AS (mean gradient [MG] ≤40mmHg, aortic valve area [AVA] <1.0 cm^2, left ventricular ejection fraction [LVEF] <50%). Patients were dichotomized into two groups based on the presence of mild or less MR (n=17) or moderate to severe MR (n=19). Primary outcome was all-cause mortality at 30-days and 1 year.

Results: Mean age was 82.47±4.50 years and 41.7% were females. No differences in the logistic EuroSCORE (36.15±13.59 vs 39.96±13.66%, p=0.41) or STS scores (8.80±5.51 vs 8.70±4.01, p=0.95) were observed at baseline. There were no significant differences in baseline AVA (0.80±0.25 vs 0.77±0.25cm^2, p=0.68), MG (24.94±9.35 vs 19.52±6.48 mmHg, p=0.052), LVEF (31.56±7.69 vs 27.74±9.67%, p=0.21) or contractile reserve (64.7% vs 84.2%, p=0.18). Pulmonary hypertension (mean pulmonary artery [PA] pressure ≥25mmHg) was observed more frequently (71.4% vs 100.0%, p=0.04) among moderate or severe MR patients on pre-invasive evaluation. Overall, the Medtronic CoreValve, Edwards SAPIEN and Symetis Accurate were implanted in 55.6%, 41.7% and 2.8% of patients, respectively. As compared with mild or less MR, a significantly higher overall mortality was observed among moderate to severe MR patients at 30-days (0.0% vs 21.1%, Log Rank =0.048). As compared with mild or less MR, moderate or severe MR patients had a significantly higher incidence of all-cause mortality at one year (5.9% vs 36.8%, Log Rank=0.031). Compared with baseline, a significant overall improvement in LVEF was observed among surviving patients at discharge (29.15±9.07 vs 34.70±10.60%, p=0.007) with no significant differences in LVEF improvement between groups (p=0.51).
Conclusion: Moderate to severe MR is associated with significantly impaired clinical outcomes among patients with LFLG severe AS undergoing TAVI at both short and medium term follow-up.
Disclosure of Interest: None declared

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Prognostic impact of systolic blood pressure and its changes during titration of medication in patients with chronic heart failure with reduced ejection fraction

M. Zurek[1,], H. Brunner-La Rocca[2], H. Rickli[1], M. Gutmann[3], R. Handschin[4], F. Nietlispach[5], U. Jeker[6], H. Pluger[7], M. Maeder[1]*
[1]Cardiology, Cantonal Hospital, St.Gallen, Switzerland, [2]Cardiovascular Research Institute Maastricht, University Medical Centre, Maastricht, Netherlands, [3]Cardiology, Cantonal Hospital, Liestal, [4]Cardiology, Cantonal Hospital, Bruderholz, [5]Cardiology, University Hospital, Zürich, [6]Cardiology, Cantonal Hospital, Luzern, [7]Bülach Hospital, Bülach, Switzerland

Introduction: In patients with heart failure (HF), low systolic blood pressure (SBP) is a marker of poor prognosis. However, the prognostic impact of changes in SBP during titration of HF medical treatment is not well known.
Method: Patients enrolled in the randomized, controlled multicenter Trial of Intensified Medical therapy in Elderly patients with Congestive Heart Failure (TIME-CHF) with left ventricular ejection (LVEF) <45% [n=499, age 76±8 years, LVEF 30±8 %] were included in this post-hoc analysis. The effects of baseline SBP and changes in SBP from baseline to 6 months during titration of angiotensin-converting enzyme inhibitors/angiotensin receptor blockers (RAS inhibitors) and beta-blockers on 18 months outcomes (survival, HF hospitalization-free survival) were examined.
Results: The mean ± SD baseline SBP in all patients was 118 ± 18 mmHg. A lower baseline SBP was associated with higher mortality {hazard ratio (HR) 0.82 [95% confidence interval (CI) 0.78- 0.97] per 10mg increase, p=0.01}. Patients in the lowest quartile of SBP (SBP<=105 mmHg, n= 127) had a significantly higher risk of death (HR 1.78, 95% CI 1.17-2.70, p=0.007) than patients in the upper three quartiles (mean SBP =126±14 mmHg). The increase in SBP during titration of medication from baseline to 6 months was directly correlated with better outcome [HF hospitalization and death: HR 0.86, 95% CI 0.78- 0.95, per 10 mmHg increase; p=0.003], even after adjustment for LVEF, NT-proBNP, age and NYHA class. Patients in the lowest quartile of SBP with the SBP failing to increase by >= 10mmHg or to > 105 mmHg were 3.2 times more likely (p< 0.001) to die or be hospitalized for HF compared to others in the lowest quartile of SBD . In patients with baseline SBP> 105 mmHg, a decrease in SBP by >= 10mmHg from baseline to 6 months was an independent predictor of adverse events (mortality: HR 2.49, 95% CI 1.21-5.11, p=0.01; death or HF hospitalization: HR 1.68, 95% CI 1.09-2.59, p=0.02) and this was not significantly influenced by changes in beta-blockers and RAS inhibitor doses.
Conclusion: In patients with HF low baseline SBP (<=105 mmHg) and a lack of increase in SBP by 10 mmHg or to > 105 mmHg during titration of HF medication is a predictor of poor prognosis. In HF patients with SBP > 105mmHg a decrease in SBP by >= 10mmHg during titration of HF therapy identifies those with poor outcome. The prognostic value of SBP and its changes was independent of other established risk factors.
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